

CLAIM AMENDMENT SHEET

CLAIMS

What is claimed is:

- 5 1. (Currently Amended) A method for treating a difficult to extinguish fire of a flammable liquid associated with an industrial scale tank having a fixed roof, and an internal roof and a substantially enclosed space above liquid and/or the internal roof in the tank and below the fixed roof, comprising:
 establishing a foam/film blanket over at least 90% of a surface of the liquid and/or internal roof within the tank; and
10 discharging dry powder/into a space between the fixed roof and said blanket through an opening or vent in structure of the tank or fixed roof structure.
2. (Currently Amended) The method of claim 1 wherein the discharging step is subsequent to establishing at least two-thirds of an 2002 NFPA regulated foam/film blanket.
3. (Currently Amended) The method of claim 1 wherein the discharging occurs during a last 10 minutes of a 2002 NFPA regulated time of application of foam.
15 4. (Withdrawn) An industrial scale tank with a roof having a substantially enclosed space above a difficult to extinguish flammable liquid in the tank and below the roof, comprising:
 at least one opening communicating with the space;
 means associated with the at least one opening for creating a foam/film blanket on the liquid; and
20 means associated with said at least one opening for discharging dry chemical into the space.
25 5. (Currently Amended) A fixed foam/dry chemical system ~~for comprising:~~
 an industrial size tank with a fixed roof, and an internal roof and having a space above a difficult to extinguish flammable liquid and/or internal roof in the tank and below the fixed roof, ~~comprising:~~
 ~~a tank with a fixed roof and an internal roof and containing a difficult to extinguish flammable liquid;~~
 at least one foam conduit fixed to the tank, in valved fluid communication with an interior of the tank through at least one opening communicating with the space; and
 at least one dry chemical conduit fixed to the tank, structured for attachment to a source of dry chemical and in valved fluid communication with the space under the fixed roof of the tank through said at least one opening and structured to discharge dry chemical into the space, the foam conduit and dry chemical conduit structured such that foam and dry chemical can be placed in separate, simultaneous fluid communication with the space through said at least one opening.
30 6. (Currently Amended) The apparatus of claim 5 including at least two said foam conduits spaced around the tank and at least two said dry chemical conduits spaced around the tank and structured such that at least one foam conduit and one dry chemical conduit communicate with the interior of the tank

through one opening in a tank wall.

7. (Original) The apparatus of claim 5 including a nozzle for discharge of dry chemical attached to the dry chemical conduit.

8. (Currently Amended) A method for extinguishing a fire of a difficult to extinguish fuel or
5 flammable liquid in an industrial scale storage tank fitted with at least a significant fixed top roof portion and having an interior roof, comprising:

discharging foam into a cavity above the fuel/liquid and/or interior roof and below the fixed top roof portion; and

10 after at least two-thirds of the way through a 2002 NFPA-recommended application rate/duration procedure guideline for the foam attack, discharging dry chemical into a cavity above the foam and below the fixed roof portion through an opening or vent in structure of the tank or fixed roof-structure portion.

9. (Previously Presented) The method of claim 8 that includes discharging dry chemical in the last ten minutes of the NFPA recommended application rate/duration procedure guideline.

15 10. (Previously Presented) The method of claim 8 that includes discharging dry chemical for 5 to 15 seconds.

11. (Previously Presented) The method of claim 8 that includes discharging dry chemical after at least 40 minutes of foam application.

20 12. (Previously Presented) The method of claim 8 that includes discharging dry chemical through at least one tank vent.

13. (Withdrawn) The method of claim 12 wherein the vent is an eyebrow vent.

14. (Previously Presented) The method of claim 12 wherein the vent is a tank roof vent.

25 15. (Currently Amended) The method of claim 8 that wherein the interior roof includes a floater on top of the fuel/liquid and the discharging of foam and of dry chemical is includes a discharging into a cavity defined between the floater and the fixed top roof portion.

16. (Previously Presented) The method of claim 8 wherein the fuel or flammable liquid comprises a blended fuel.

30 17. (Currently Amended) Apparatus ~~for extinguishing a difficult to extinguish fuel or flammable liquid fire in an industrial scale storage tank with a fixed roof portion, an internal roof and at least one vent opening into a space defined above the fuel/liquid and/or internal roof surface and a fixed roof portion,~~ comprising;

an industrial scale storage tank containing a difficult to extinguish fuel or flammable liquid and having a fixed roof portion, and an internal roof, defining a space or cavity above the fuel/liquid and/or internal roof surface and below the fixed roof portion; and

- a dry chemical supply pipe system for extinguishing fire, rising along a portion of the tank wall having at least one end opening into a tank vent venting the space or cavity, the pipe system in fluid communication with a source of dry powder and structured to discharge dry chemical into the space.
18. (Original) The apparatus of claim 17 wherein the supply pipe system has multiple ends inserted
5 into multiple tank vents.
19. (Withdrawn) The apparatus of claim 17 wherein the vent comprises a wall eyebrow vent.
20. (Original) The apparatus of claim 17 wherein the vent comprises a roof vent.
21. (Original) The apparatus of claim 17 wherein the supply pipe system is permanently affixed to
the tank.
- 10 22. (Original) The apparatus of claim 17 wherein the supply pipe system is portable.
23. (Currently Amended) The apparatus of claim 17 ~~that wherein the interior roof~~ includes a floater,
and wherein the space defined above the fuel/liquid surface is space defined above the floater.
24. (Original) The apparatus of claim 17 wherein the difficult to extinguish fuel or flammable liquid
comprises a blended fuel.
- 15 25. (Previously Presented) A fixed dry chemical system, comprising:
an industrial scale storage tank having a fixed roof and internal roof and at least one aperture;
a source of dry chemical located external to the tank;
piping/line in fluid communication with the source;
a dry chemical discharge orifice in fluid communication with the piping/line, located interior of
20 the tank and structured such that dry chemical passes from the source through the piping/line and through
the said tank aperture to the discharge orifice; and
wherein the piping/line is integrated with a fixed foam system and the fixed foam system is
structured to discharge foam through the tank aperture, separately and simultaneously with discharging
dry chemical.
- 25 26. (Currently Amended) The system of claim 25 wherein a discharge orifice includes a low flow dry
chemical discharge tip, discharging approximately 10 pounds per second or less.
27. (Currently Amended) The system of claim 25 wherein the discharge orifice includes at least one
high flow dry chemical discharge tip, discharging at least 30 pounds per second.
28. (Previously Presented) The system of claim 27 wherein the high flow dry chemical discharge tip
30 comprises a pair of tips discharging to the left and to the right of the tank aperture.
29. (Previously Presented) The system of claim 26 wherein the low flow dry chemical discharge tip
discharges approximately toward the middle of the interior of the tank.
30. (Previously Presented) The system of claim 25 wherein the piping/line is attached to a fitting
associated with the tank aperture.

31. (Cancelled)
32. (Currently Amended) A method for extinguishing fire in an industrial scale tank having a fixed roof and an internal roof above a flammable liquid, comprising:
covering the surface of the liquid and/or internal roof in the tank on fire with a blanket of foam;
5 and
subsequent to the establishment of a-the foam blanket on the liquid in the tank, discharging dry chemical through an aperture in at least one of the tank and the fixed roof into a substantially enclosed space below the fixed roof and above the foam blanket.
33. (Previously Presented) The method of claim 32 wherein the discharging of the dry chemical
10 utilizes a fixed dry chemical system.
34. (Previously Presented) The method of claim 32 wherein the creating of the foam blanket utilizes a fixed foam system.
35. (Previously Presented) The method of claim 33 wherein the creating of the foam blanket utilizes a fixed foam system.

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